

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

February 28, 2007 Meeting

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Harkless

Notes: Erin Halton

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the “record” of the meeting, only a reminder for TMT members.

Changes to the 2.14.07 TMT Meeting Minutes

Robin Harkless, facilitator, noted that there had been several edits made to the facilitator's summary, and that a new version was posted on the TMT website for review. Paul Wagner, NOAA, asked for the word ‘chum’ to be removed from the transport section of the minutes; and Cathy Hlebechuk, COE, asked to be identified as the TMT chair in the minutes.

Water Supply Forecasts

Cathy Hlebechuk, COE, noted that this agenda item was a follow up from the last TMT meeting and the subsequent requests from TMT members to have further discussion on how the NWRFC and COE forecasts are generated. Hlebechuk told the group that there is no one “best” forecast, and introduced Steve King and Rick van der Zweep from NWRFC and Randy Wortman from the COE to address the topic. Their power point presentations, linked to the TMT agenda, illustrated some of the primary differences between the two forecasts: the COE uses a 71 year average and the RFC uses a 30 year average to come up with their percentages; and the COE does not use rain precipitation in their equations (just snow), while the RFC includes both rain and snow. TMT members said they appreciated both the RFC and COE forecasts, the use of the best available science in the interest of not over-drafting the reservoirs, and thanked King, van der Zweep, and Wortman for their willingness to explain their process to TMT. A suggestion to coordinate with the climate change impact group was made to both the RFC and the COE forecasters.

2007 Water Management Plan

Bernard Klatte, COE, said that the COE hoped to finalize the fall/winter update to the Water Management Plan today. CRITFC said that they still planned to submit comments, and would send them to Klatte by the end of the week. IDFG said they finished their review of the Fall/Winter update and had no further comments. Those TMT members present at the meeting: BOR, USFWS, ID, WA, NOAA, BPA, COE, did not object to finalizing the WMP fall/winter update and the 2007 WMP as it was currently posted. Dave Wills, USFWS, suggested the use of ‘strike through’ version for ease in reviewing edited versions of documents in the future.

Action/Next Steps: Comments from CRITFC will be posted to the TMT web site and discussed at the next TMT, for inclusion in the final version of the WMP spring/summer update. Cathy Hlebechuk, COE, will brief IT on the WMP fall/winter update at the meeting on 3/1.

SOR #2007-2 Spring Creek Hatchery

Paul Wagner presented the SOR, attached to the TMT agenda, on behalf of the following Salmon Managers: ODFW, WDFW, Shoshone-Bannock Tribes, and CRITFC. The SOR requested four days of 75 kcfs spill at Bonneville during either the first (March 5) or second (March 9) release of fish from Spring Creek hatchery, whichever is determined by the Action Agencies as best for overall Columbia River operations. This request is being made to provide spill to support fish passage and passage survival tests underway for 2007. TMT members discussed the SOR and those present were polled on their level of support: WA and ID were supportive; USFWS did not support or object; BOR did not support or object and deferred to the COE; CRITFC could not support spill, but was supportive of operation of the corner collector; NOAA chose not to participate and was neutral; BPA deferred to the COE; Bernard Klatte, COE, said that the COE thanked the Salmon Managers for the efforts that went into the SOR, but that the COE could not support spill this year. Klatte reported that the COE had worked with USFWS, BPA and NOAA to review technical data and determined the following plan:

- The COE plans to operate Bonneville project in the following manner, beginning no later than March 1, to accommodate the hatchery fish release:
 1. Operate the second powerhouse as first priority.
 2. Operate the second powerhouse corner collector (5 kcfs discharge).
 3. Operate fish passage facilities in accordance with the Fish Passage Plan
 4. Operate turbine units within the 1% of best efficiency range.
 5. Operate first powerhouse Minimum Gap Runner (MGR) units on a first on/last off basis when that powerhouse operates. Follow FPP unit operating priorities at both powerhouses.
- Given the data reviewed by the workgroup, the operations are expected to result in high survival for fish passing the project. The spill and corner collector treatments will not be provided for tests in 2007, for a variety of reasons.

Next Steps: Given the lack of consensus amongst TMT members, Paul Wagner, speaking on behalf of OR, requested elevating the following question to IT for further discussion at their meeting on 3/1:

“Should spill (and associated flow required for chum redd depth compensation downstream) be provided for a four-day period during the Spring Creek hatchery release? This would allow evaluation of the effects of spill plus corner collector vs. corner collector only operations and support a spread the risk operation for this release group. Additionally, the same flow is requested for both release groups to insure that both released groups pass the project under similar flow conditions.”

Chum Incubation Update

Paul Wagner, NOAA, reported that seining had begun and fish were present near Ives Island, signaling the beginning of emergence. Wagner added that the timing seemed comparable to that of previous years, and that end of April is the typical time for the end of emergence.

Next Steps: A chum update will be on the agenda for the 3/14 TMT meeting.

Sea Lion Update:

Bernard Klatte, COE, shared information from Robert Stansell, COE, who had said there were 7 California sea lions and 7 stellar seal lions observed near the Bonneville Dam area. Klatte said there had been joint state and federal (COE, ODFW, and USDA-APHIS) hazing meetings, a hazing training was held on 2/28, and hazing was slated to begin on 3/1 with some constraints within the Boat Restricted Zone (BRZ). Only 3-5 seal 'bombs' will be used on an animal per occurrence, until the fish count reaches 1k passing Bonneville dam in a 24-hour period. Klatte added that the Sea Lion Exclusion Devices (SLEDs) are in place. A question was raised on whether any studies on the effects on sturgeon or monitoring was happening, which prompted the next step below:

Action/Next Steps: A suggestion was made to bring Stansell in to make a more thorough presentation to TMT at an upcoming meeting. Klatte will update TMT on the sea lion efforts as the season progresses.

Operations Review

Reservoirs: Grand Coulee was at 1281.5' with outflows being made to meet the 13' minimum tailwater below Bonneville and the 70 kcfs minimum below Priest Rapids; Hungry Horse was at 3531.99' and releasing 2.4kcfs to meet Columbia Falls minimums; and Libby was at 2389.03', with minimum flows and 7' below its end of February target elevation of 2396'. Dworshak was at 1537.9', and 12.5' below its end of February target elevation of 1550.4'; Bonneville outflows were in the 140 range.

NOTE: March final flood control targets and shifts will be discussed at the TMT meeting on 3/14.

Fish: Cindy LeFleur, WA, sent a summary report of the spring/summer adult forecasts to the COE, posted on the TMT website. LeFleur and Paul Wagner, NOAA, said that it was too early in the season for anything but a chum emergence update.

Power: Nothing to report at this time.

Water quality: Jim Adams, COE, said that gauges at Cascade Island, Camas/Washougal and Bonneville were up and running.

Next TMT Face-to-Face Meeting, March 14th, 9:00-noon

Agenda Items include:

- Water Supply Forecasts
- Spring Creek Hatchery After Action Report
- Hanford Reach fall Chinook Emergence / Spring Protection
- Tentative: Sea Lion Presentation
- Flood Control Targets / Shifts
- Operations Review

**Columbia River Regional Forum
Technical Management Team Meeting
February 28, 2007**

1. Welcome and Introductions

Today's TMT meeting was chaired by Cathy Hlebechuk and facilitated by Robin Harkless, with representatives from COE, USFWS, BPA, NOAA-F, CRITFC, PNGC, BOR, and the states of Idaho and Washington in attendance either in person or by phone. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

2. Review of Meeting Minutes

Paul Wagner noted that "chum" (WHERE IS IT?) should be deleted from the transportation update in the Feb. 14 meeting minutes. [Hlebechuk comment: It is in Jan 31 minutes. Robin Harkless also asked me to change the Feb. 14 minutes to reflect Cathy Hlebechuk is the TMT chair, not Robin Harkless.]

3. Discussion of Dworshak Water Supply Forecast

As of the last TMT meeting, the COE water supply forecast for Dworshak was 79% of normal and the RFC forecast was 93% of normal. In response to concerns about the discrepancy, Cathy Hlebechuk (COE) invited Steve King (RFC) and Randy Wortman (COE) to explain to the TMT how their respective agencies calculate water forecasts.

A. RFC Forecasting. There are three basic components of the RFC water supply forecasting process, Steve King (RFC) said. First comes a regression-based model. Second, the model is manually adjusted to examine the reasonableness of the answer and whether it really represents what is happening across all the spill bays at the dam. An important tool at this stage is a comparison with water supplies in nearby basins, which tend to balance out through the season. Finally, the RFC forecast is coordinated with other forecasts, primarily USGS.

RFC uses a single equation to represent observed precipitation, snow and runoff for the entire forecast period, which is a unique approach. For October and November, the overall runoff at Dworshak was 174% of normal. For November through January precipitation, the seasonal weighted mean was 142% of normal, while the aerial weighted mean for snowpack was 82% of normal.

Forecasting accuracy improves as the season progresses, King said. At the last TMT meeting, predictions were drier than normal, but things have

changed so that we'll probably end up with at least a normal water supply for February.

B. COE Forecasting. The COE model was refitted by the NRCS after the 1994-95 seasons, which was similar to this season in terms of a very wet November, Randy Wortman (COE) said. In 2005, COE refit the model again using all available data and stations. That model serves for the current water supply forecast and was calibrated to 44 years of observed data. The latest model performs quite similarly to the previous generations of models, except that the December forecast has been significantly improved after reinstating a November precipitation variable that had been previously dropped.

This year, the forecast for Dworshak was very high in December at 3,465 KAF, dropping significantly to 2,905 KAF in January and further down to 2,126 KAF in February. What's of note is that the December 1 forecast is based on the effects of El Nino and one precipitation station. Statistically this one precipitation station provides a better result in the model than any combination of precipitation stations, or no stations at all. There's no snow worth measuring in November, so that November's precipitation, measured at 10.79 inches (218% of normal) had a great influence on the forecast volume. This single precipitation value was responsible for almost 2 MAF of the 3.5 MAF forecasted that month. The February forecast of 2.1 MAF is a more balanced forecast, with more variables and no precipitation component.

Wortman showed the current (February 27) NCRS assessment of Dworshak basin across all snow stations as 88% of average water content in the basin, and the Corps' early estimate of the 1-March forecast as 83% of normal. COE percentages of runoff compared to average are measured against 71 years of data, while the Weather Service percentages are measured against approximately 30 years of data. The COE forecasts are currently lower than RFC forecasts because the extremely wet fall precipitation measurements of this year are no longer influencing the computations, and the snow conditions in February are now a predominate influence on the COE model. Wortman said that COE forecasters strive for accuracy over consistency from month to month.

Kyle Dittmer (CRITFC) asked, why don't COE and RFC coordinate their forecasts, given that both methods appear to be based on sound science? With two forecasts, you can see the range of uncertainty involved in the forecasting business, King said. Wortman reported that the Corps is responsible to provide the "official" forecast for their projects and that any subjective adjustments (e.g. coordination) to the forecasts would eliminate any quantification of the "standard error", and the standard error is a necessary component to the Corps' refill calculations. What hurts the salmon community most is when forecasts go down, and suddenly there's not enough water for fish, Dittmer said. He urged the agencies involved to do what they can to avoid that. Waffling on forecasts is

appropriate for the fisheries objective of trying not to overdraft reservoirs and being responsive to current conditions, Paul Wagner (NOAA-F) said.

The group discussed the potential impacts of climate change on forecasts that have been based on historic trends. Wortman and King agreed that any climate change issues at this point are extremely negligible compared to error based on natural data variability, Wortman said.

4. Water Management Plan Final Review

Finalization of the Water Management Plan was agreed to by all present at TMT with the exception of allowing a few more days to give the CRITFC and Idaho representatives more time to submit their comments. BOR, USFWS, NOAA-F, BPA, Idaho and Washington representatives accepted the plan as published on the website. Oregon and Montana representatives were absent from the meeting but have already commented, Bern Klatte (COE) said. Robyn MacKay and Robin Harkless suggested that CRITFC and COE representatives work independently to publish the final plan on the website alongside CRITFC's comments so TMT members can see the changes.

Dave Wills (USFWS) suggested using a strikeout format for electronic revisions; Klatte agreed that changes are difficult to identify when they appear in balloon format. Harkless noted that the final water management plan would be a topic of discussion at the IT meeting on March 1.

5. Spring Creek Hatchery SOR #2007-02, Feb. 27, 2007

Paul Wagner (NOAA-F) presented this SOR on behalf of ODFW, WDFW, CRITFC and the Shoshone-Bannock tribe.

The SOR requested 4 days of 75 kcfs spill at Bonneville during either the March 5 or March 9 releases of 7.5 million subyearling fall Chinook salmon from Spring Creek Hatchery. Discretion was left to the Action Agencies regarding which of the March releases should receive the spill treatment. This operation would allow evaluation of the effects of spill plus corner collector vs. corner collector only operations and support a spread-the-risk operation for this release group. Additionally, the same flow was requested for both release groups to insure that both groups would pass the project under similar flow conditions.

In 2004, there was an evaluation of fish passing through the corner collector vs. fish passing through spill only, Wagner said. Complete return for these fish occurs over a four-year period. So far, there are two years of data on hand. Preliminary results indicate that fish passing through the spillway have a better survival rate than fish passing through the corner collector. The corner collector is already scheduled to be open for a kelt passage study beginning March 1. The key change described in this SOR is asking for four days of 75 kcfs

spill on top of the operation of the corner collector prior to the beginning of spill season on April 10, Wagner said.

John Roache (BOR) asked, what's the total discharge involved? Wagner estimated that 1.5 to 2 feet of depth compensation would be needed to keep chum redds below Bonneville safe from TDG, resulting in a tailwater depth of approximately 14.5 feet. The COE estimates that TDG levels would be around 117% with 75k of spill, resulting in roughly 4 feet of depth compensation needed to protect chum redds, Jim Adams (COE) said.

Steve King (NOAA-NWRFC) said numbers based on existing modeling have compared a total volume of 150 kcfs to just corner collector operation, 50 kcfs of spill, and 75 kcfs of spill. That modeling exercise yielded estimates of 104-108% TDG levels, assuming high forebay gas levels of 104-108% and a high spill level. Assuming it takes about 4-5 days for all fish to pass Bonneville, the National Weather Service projected volumes of 158-172 kcfs for one day. Passing 160 kcfs through Bonneville is known to result in a tailwater of 14.5 to 15 feet, he said.

Robyn MacKay (BPA) asked for clarification that one of the four-day tests would be with spill, corner collector, and depth compensation and the other 4-day test would be without spill, but with the corner collector and similar flows or volume as the spill/corner collector treatment. There are three potential operations with the corner collector online – spill only, corner collector operation only, and corner collector operation with spill, Steve Haeseker (USFWS) said. The primary purpose of this SOR goes back to discussions in 2004 regarding a comparative evaluation of those three operations, Haeseker said.

The TMT could not come to consensus on the SOR, so ODFW requested that it be elevated to the IT for further discussion the following day. Individual TMT representatives gave their votes. Due to an agreement between CRITFC and BPA, CRITFC can't support the spill provision, but does support the corner collector treatment, Dittmer said. Idaho and Washington both support the SOR, Russ Kiefer and Cindy LeFleur said. NOAA-F is neutral, Paul Wagner said. USFWS also takes a neutral position, David Wills said, while recognizing that the SOR aligns itself with the goals of testing begun in 2004. BPA looks to the COE for an outcome to those ongoing discussions between BPA, COE and the USFWS regarding continuation of that testing, Robyn MacKay said. John Roache stated that the BOR did not support or object to the SOR and deferred to the COE.

Bernard Klatte (COE) stated that the COE planned operation for the Spring Creek Release, based on considering the input provided at the previous technical and policy meetings, is to operate the Bonneville second powerhouse corner collector to accommodate the fish hatchery release in accordance with the

Fish Passage Plan. He listed the COE's reasons for not providing spill and corner collector treatments for testing in 2007, they are:

1. Spillway survival rates are currently lower than desired.
2. The COE is aggressively evaluating spillway mortality in 2007, and it is premature to run tests until the results, which will be available this fall, are used to improve spillway survival.
3. While preliminary results of a CWT study found that tagged fish showed higher adult returns for spillway operations, these results don't yet include age-4 fish or harvest data.
4. TIEs will not be installed at the 2nd powerhouse due a broken crane, which might influence passage patterns and compromise results of a CWT test in 2007.
5. Fish reprogramming discussions for John Day mitigation and hatchery production are underway, which could eliminate the need for a March release from Spring Creek Hatchery.
6. Chum salmon spawned at higher elevations than usual in 2006, making it more difficult to provide TDG depth compensation for chum redds during a spill treatment.

6. Chum Emergence Update

Seining has begun, said Paul Wagner (NOAA-F), meaning the dragging of nets through water to evaluate whether fish are present. Fish have been found below the Ives Island area, which indicates the beginning of chum emergence. If this year is like similar years, emergence should continue through April.

Robin Harkless said she would ask ODFW for information regarding chum emergence to be linked to the next meeting agenda on the TMT website.

7. Sea Lion Update

Bernard Klatte (COE) provided an update on pinnipeds below Bonneville Dam and passed around photographs of a stellar sea lion eating a white sturgeon, taken near Government Island. A total of 7 california sea lions were observed below Bonneville Dam on Feb. 26, with 4 of the seven sea lions arriving that day. There are also 7 stellar sea lions now in the vicinity of Bonneville Dam.

Starting March 1, ODFW and USDA will conduct a joint hazing program during daylight hours for 7 days a week until the end of May, Klatte said. The hazing effort will be more intense this year than last year. Seal bombing will be allowed at the rate of 3-5 bombs per individual per hazing occurrence until the fish count gets to a thousand fish passing Bonneville in a 24-hour period. Hazing will also be conducted from shore using rubber bullets and pyrotechnics. TMT members wondered whether a thousand fish means cumulatively or a daily

count; David Wills (USFWS) said he would find out and report back. A participant asked whether SLEDS (sea lion exclusion devices) had been installed; Klatte said yes. Robin Harkless said she would ask Robert Stansell (COE) to update the group later this season on how the hazing program is working.

8. Operations Review

A. Reservoirs. Grand Coulee is at 1,281.5 feet elevation, with releases being made to maintain a 13 foot minimum tailwater below Bonneville, also to maintain a 70 kcfs minimum flow at Priest Rapids, John Roache (BOR) said. The end of March flood control elevation based on the February forecast is 1,275.6 feet. The April 10 upper rule curve elevation based on that forecast is calculated at 1,264.4 feet, with non-shifted flood control. Hungry Horse is at 3,531.99 feet, with releases around 2,400 cfs.

Libby is at 2,389.03 feet, which is below its end of February flood control elevation target of 2,396 feet, so the project is on minimum flow, Cathy Hlebechuk said. Dworshak is at 1,537.9 feet, about 13 feet below its end of February flood control elevation target, and is also on minimum flow. Ice Harbor is running about 35,000 cfs and Bonneville is at about 140 kcfs..

The group discussed flood control shifting. For planning purposes, Paul Wagner (NOAA-F) asked, when is a shift decision best made? After the March final forecast? Roache thought that would be a good time. Cathy Hlebechuk (COE) wondered whether anything might happen in next month's forecast to allow a shift. Right now, elevations are expected to drop, Roache said. He and Wagner agreed that the March 14 TMT meeting would be a good time to discuss flood control shifting.

B. Fish. Chum emergence is beginning, Wagner said. Other than that, there's nothing to report this early in the season, he and Cindy LeFleur (WDFW) agreed.

C. Power. There is nothing to report, Robyn MacKay said.

D. Water Quality. Gages have been in place at Cascade Island, Camas-Washougal, and the Bonneville forebay for about a week now, Jim Adams (COE) reported.

9. Next TMT Meeting

The March 14 agenda will include the March final water supply forecast, flood control shifting, any updates on additions to the final water management plan, a chum emergence update, a Spring Creek after-action report, and the usual operations review, Harkless said. Paul Wagner (NOAA-F) requested that

a Grant County representative give projections on Hanford operations for fall Chinook emergence in Hanford Reach.

<i>Name</i>	<i>Affiliation</i>
Cathy Hlebechuk	COE
John Roache	BOR
David Wills	USFWS
Paul Wagner	NMFS
Jim Adams	COE
Robyn MacKay	BPA
Kyle Dittmer	CRITFC
Erin Halton	DSC
Dan Spear	BPA
Rick van der Zweep	NOAA-NWRFC
Steve King	NOAA-NWRFC
Russ George	WMCI
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